Cisco UCS B200 M2 Blade Server

Overview

The Cisco® UCS B200 M2 Blade Server is a two-socket, half-width blade server, using Intel's Xeon 5500 and 5600 Series processors with 12 DIMM slots, one mezzanine slot and up to two solid-state disk (SSD) drives. Up to eight half-width blade servers can be accommodated in the Cisco UCS 5108 Blade Server Chassis.
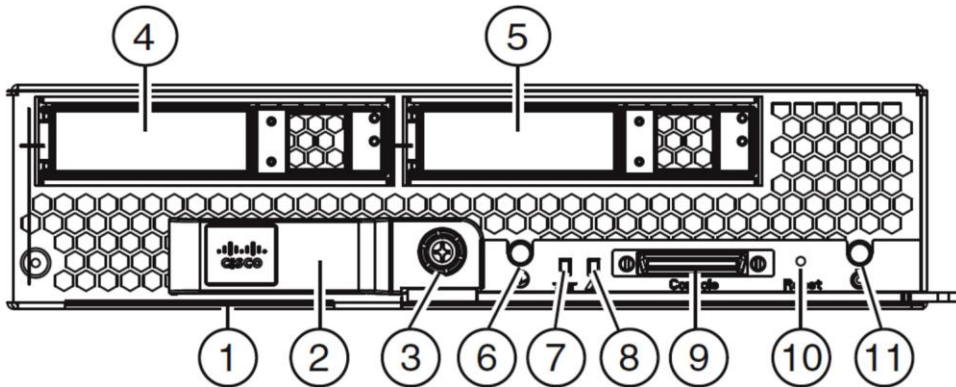
Figure 1.   Cisco UCS B200 M2 Blade Server

Contents:	Overview	Detailed Views	Base Unit Features	Configuring	Memory
	HDD	Software	Services	Memory Notes	
	Physical Specs	Power Specs	Environmental Specs		

Detailed Views

Figure 2.   Front View of the Cisco UCS B200 M2 Blade Server

1	Asset tag	2	Blade ejector handle
3	Ejector captive screw	4	Hard drive bay 1
5	Hard drive bay 2	6	Power on/standby button and LED
7	Network link status LED	8	Blade health LED
9	Keyboard, video, monitor (KVM), Console connector	10	Reset button
11	Locator button and LED		

Figure 3.   KVM console connector cable
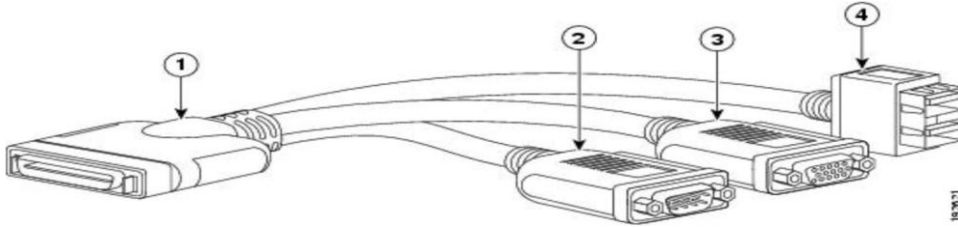
1	Connector to blade server slot	3	VGA connection for a monitor
2	DB9 serial connector	4	2-port USB connector for a mouse and keyboard

Figure 4. Inside view of the B200 M2 blade server
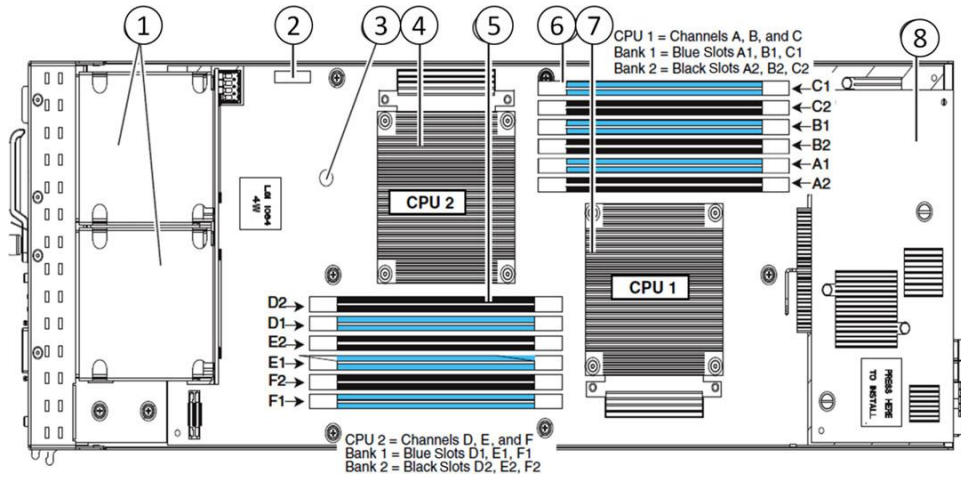
1	Hard drive bays	2	CMOS battery
3	Diagnostic button	4	CPU 2 and heat sink
5	DIMM slots for CPU2	6	DIMM slots for CPU1
7	CPU 1 and heat sink	8	Adapter card connector

Contents: Overview   Detailed Views   Base Unit Features   Configuring   Memory
HDD   Software   Services   Memory Notes
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Base Unit Features

Table 1.   Feature Specifications for the Cisco UCS B200 M2 Blade Server

Feature	Specification
CPU	Up to two Intel® Xeon® 5500 or 5600 Series processors
Chipset	Intel® 5500 chipset
Memory	12 DIMM slots (up to 192 GB)
Expansion slot	One mezzanine adapter slot
Internal storage devices	Up to two optional front-accessible, hot-swappable 2.5-inch small form factor (SFF) SAS or 15mm SATA solid-state disk (SSD) drives, with an LSI Logic 1064e controller and integrated RAID
Interfaces	A console port is provided to give a direct connection to a blade server to allow operating system installation and other management tasks to be done directly rather than remotely. The port uses a local console cable included in the chassis accessory kit. The local console connector cable (N20-BKVM=) provides a connection into the blade server, providing a DB9 serial connector, a VGA connector for a monitor, and dual USB ports for a keyboard and mouse.
Power subsystem	Integrated in Cisco UCS 5100 Series Chassis
Fans	Integrated in Cisco UCS 5100 Series Chassis
Integrated management processor	Cisco Integrated Management Controller (CIMC) interface to Cisco UCS Manager

Configuring the Cisco UCS B200 M2 Blade Server

UCS B200 M2 base server (must be selected)   N20-B6625-1-UPG

STEP: 1   Select the CPU type

Select one or two CPUs from the following list:

Intel Xeon 5600 Series

- 3.46 GHz Xeon X5690 130W 6C CPU/12MB cache/DDR3 1333MHz   A01-X0115
- 3.33 GHz Xeon X5680 130W 6C CPU/12MB cache/DDR3 1333MHz   A01-X0100

- 3.06 GHz Xeon X5675 95W 6C CPU/12MB cache/DDR3 1333MHz   A01-X0117
- 2.93 GHz Xeon X5670 95W 6C CPU/12MB cache/DDR3 1333MHz   A01-X0102
- 2.66 GHz Xeon X5650 95W 6C CPU/12MB cache/DDR3 1333MHz   A01-X0105

- 2.53 GHz Xeon E5649 80W 6C CPU/12MB cache/DDR3 1333MHz   A01-X0120
- 2.66 GHz Xeon E5640 80W 4C CPU/12MB cache/DDR3 1066MHz   A01-X0109
- 2.40 GHz Xeon E5620 80W 4C CPU/12MB cache/DDR3 1066MHz   A01-X0111

- 2.26 GHz Xeon L5640 60W 6C CPU/4MB cache/DDR3 800MHz   A01-X0106

Intel Xeon 5500 Series

- 2.93 GHz Xeon X5570 95W 4C CPU/8MB cache/DDR3 1333MHz   N20-X00001
- 2.66 GHz Xeon X5550 95W 4C CPU/8MB cache/DDR3 1333MHz   N20-X00006

- 2.53 GHz Xeon E5540 80W 4C CPU/8MB cache/DDR3 1066MHz   N20-X00002

- 2.26 GHz Xeon E5520 80W 4C CPU/8MB cache/DDR3 1066MHz   N20-X00003

- 2.26 GHz Xeon L5520 60W 4C CPU/8MB cache/DDR3 1066MHz   N20-X00004

STEP: 2   Select the memory type

Please refer to the Memory Notes section for allowable memory configurations and rules/guidelines.

Select a minimum of one and a maximum of 12 DIMMs from the following list:

- 4GB DDR3-1333MHz RDIMM/PC3-10600/dual rank 1Gb DRAMs   N01-M304GB1
- 8GB DDR3-1333MHz RDIMM/PC3-10600/dual rank 2Gb DRAMs   N01-M308GB2

- 4GB DDR3-1333MHz RDIMM/PC3-10600/single rank/Low-Dual Volt   A02-M304GB2-L
- 4GB DDR3-1333MHz RDIMM/PC3-10600/dual rank/Low-Dual Volt   N01-M304GB1-L
- 8GB DDR3-1333MHz RDIMM/PC3-10600/dual rank/Low-Dual Volt   N01-M308GB2-L

- 16GB DDR3-1066MHz RDIMM/PC3-8500/quad rank/Low-Dual Volt   A02-M316GB2-L

- Factory Memory Mirroring Option   N01-MMIRROR

STEP: 3   Select the 2.5-inch Small Form Factor (SFF) drive type (optional)

The 2.5-inch drive is not required. You can select a maximum of two drives from this list:

- 73GB 6Gb SAS 15K RPM SFF HDD/hot plug/drive sled mounted   A03-D073GC2
- 146GB 6Gb SAS 10K RPM SFF HDD/hot plug/drive sled mounted   A03-D146GA2
- 146GB 6Gb SAS 15K RPM SFF HDD/hot plug/drive sled mounted   A03-D146GC2

- 300GB 6Gb SAS 10K RPM SFF HDD/hot plug/drive sled mounted   A03-D300GA2
- 600GB 6Gb SAS 10K RPM SFF HDD/hot plug/drive sled mounted   A03-D600GA2

STEP: 4 Select a mezzanine card

A mezzanine card is required. Select one from the following list:

- UCS M81KR Virtual Interface Card/PCIe/2-port 10Gb   N20-AC0002

- Cisco UCS M71KR-Q QLogic Converged Network Adapter   N20-AQ0002
- Cisco UCS M71KR-E Emulex Converged Network Adapter   N20-AE0002

- Cisco UCS CNA M61KR-I Intel Converged Network Adapter   N20-AI0102
- Cisco UCS NIC M51KR-B Broadcom BCM57711 Network Adapter   N20-AB0002

- Cisco UCS CNA M72KR-E Emulex Converged Network Adapter   N20-AE0102
- Cisco UCS CNA M72KR-Q QLogic Converged Network Adapter   N20-AQ0102

STEP: 5 Select the operating system. (optional)

A variety of operating system options are available.

SUSE Linux Enterprise Server

- SLES/1yr subscription/svcs required/0 media   SLES-1A
- SLES/3yr subscription/svcs required/0 media   SLES-3A

Red Hat Enterprise Linux

- RHEL/2 Socket/1 Guest/1Yr Svcs Required   RHEL-2S-1G-1A
- RHEL/2 Socket/1 Guest/3Yr Svcs Required   RHEL-2S-1G-3A
- RHEL/2 Socket/4 Guest/1Yr Svcs Required   RHEL-2S-4G-1A
- RHEL/2 Socket/4 Guest/3Yr Svcs Required   RHEL-2S-4G-3A
- RHEL/2 Socket/U Guest/1Yr Svcs Required   RHEL-2S-UG-1A
- RHEL/2 Socket/U Guest/3Yr Svcs Required   RHEL-2S-UG-3A
- RHEL/4 Socket/1 Guest/1Yr Svcs Required   RHEL-4S-1G-1A
- RHEL/4 Socket/1 Guest/3Yr Svcs Required   RHEL-4S-1G-3A
- RHEL/4 Socket/4 Guest/1Yr Svcs Required   RHEL-4S-4G-1A
- RHEL/4 Socket/4 Guest/3Yr Svcs Required   RHEL-4S-4G-3A
- RHEL/4 Socket/U Guest/1Yr Svcs Required   RHEL-4S-UG-1A
- RHEL/4 Socket/U Guest/3Yr Svcs Required   RHEL-4S-UG-3A

RHEL Add-Ons

- High-Availability/2 Socket/1Yr Svcs Required   RHEL-HA-2S-1A
- High-Availability/2 Socket/3Yr Svcs Required   RHEL-HA-2S-3A
- High-Availability/4 Socket/1Yr Svcs Required   RHEL-HA-4S-1A
- High-Availability/4 Socket/3Yr Svcs Required   RHEL-HA-4S-3A
- Resilient Storage With Ha/2 Socket/1 Yr Svcs Required   RHEL-RS-2S-1A
- Resilient Storage With Ha/2 Socket/3 Yr Svcs Required   RHEL-RS-2S-3A
- Resilient Storage With Ha/4 Socket/1 Yr Svcs Required   RHEL-RS-4S-1A
- Resilient Storage With Ha/4 Socket/3 Yr Svcs Required   RHEL-RS-4S-3A

Windows Server

- Windows Svr 2008 ST media (1-4CPU, 5CAL)   MSWS-08-STHV
- Windows Svr 2008 EN media (1-8CPU, 25CAL)   MSWS-08-ENHV
- Windows Svr 2008 ST media R2 ST (1-4CPU, 5CAL)   MSWS-08R2-STHV
- Windows Svr 2008 EN media R2 EN (1-8CPU, 25CAL)   MSWS-08R2-ENHV

- Windows Svr 2008 R2-2 CPU-Data Center   MSWS-08R2-DCHV2S
- Windows Svr 2008 R2-4 CPU-Data Center   MSWS-08R2-DCHV4S

VMware Server

- VMware vSphere Advanced (1 CPU), 1yr 24x7 support   VMW-VS-ADV-1A
- VMware vSphere Advanced (1 CPU), 3yr 24x7 support   VMW-VS-ADV-3A

- VMware vSphere Enterprise (1 CPU), 1yr 24x7 support   VMW-VS-ENT-1A
- VMware vSphere Enterprise (1 CPU), 3yr 24x7 support   VMW-VS-ENT-3A
- VMware vSphere Enterprise Plus (1 CPU), 1yr 24x7 support   VMW-VS-ENTP-1A
- VMware vSphere Enterprise Plus (1 CPU), 3yr 24x7 support   VMW-VS-ENTP-3A

Select an OS Media Kit. (optional)

- RHEL 6 Media Only (Multilingual)   RHEL-6
- SLES 11 media only (multilingual)   SLES-11
- Windows Svr 2008 ST media   MSWS-08-STHV-RM
- Windows Svr 2008 EN media   MSWS-08-ENHV-RM
- Windows Svr 2008 ST media R2 ST (1-4CPU, 5CAL)   MSWS-08R2-STHV-RM
- Windows Svr 2008 EN media R2 EN (1-8CPU, 25CAL)   MSWS-08R2-ENHV-RM
- Windows Svr 2008 ST media R2 DC (1-8CPU, 25CAL)   MSWS-08R2-DCHV-RM

STEP: 6   Select from a variety of value-added software. (optional)

- BMC BladeLogic CM for Virtualized Cisco Servers   BMC-001
- BMC Blade Logic Compliance, VM Bundle, 2 Socket Server   BMC-001-COMP
- BMC BladeLogic CM for Physical Cisco Servers   BMC-002
- BMC Blade Logic Compliance, Single OS   BMC-002-COMP
- BMC Bladelogic CM, Virtualized 4-Socket Server   BMC-003
- BMC Blade Logic Compliance, VM Bundle, 4 Socket Server   BMC-003-COMP
- BMC BPPM Per Server   BMC-012

- VMware vCenter Server Standard, 1yr 24x7 support   VMW-VCS-1A
- VMware vCenter Server Standard, 3yr 24x7 support   VMW-VCS-3A
- Nexus 1000V License PAK for 1 Virtual Ethernet module   N1K-VLEM-UCS-1
- Nexus 1000V VSM Virtual Appliance Software   N1K-CSK9-UCS-404

STEP: 7   Select the appropriate Services. (optional)

A variety of Service options are available, as listed here.

Unified Computing Mission Critical Service

This service delivers personalized technical account management, expedited technical support, and expert field support engineering for the Cisco Unified Computing System (UCS).

The Mission Critical Support Service provides a designated technical account manager (TAM) who acts as a strategic resource to help assure the unified computing environment runs at peak efficiency. Should a problem arise that threatens business continuity, the TAM provides crisis management leadership, and customer IT staff gets expedited access to Cisco's award-winning Technical Assistance Center (TAC).

Please note: This service has qualification criteria. There should be $1.2M of UCS equipment, 200 blades and a single location to qualify for this service level.

- UC Mission Critical 24x7x4 On-site   CON-UCM7-B66251U
- UC Mission Critical 24x7x2 On-site   CON-UCM8-B66251U

Unified Computing Support Service

For support of the entire Unified Computing System, Cisco offers the Cisco Unified Computing Support Service. This service provides expert software and hardware support to help sustain performance and high availability of the unified computing environment. Provided is the access to the award-winning Cisco Technical Assistance Center (TAC) around the clock, from anywhere in the world.

For UCS blade servers, there is Smart Call Home, which provides proactive, embedded diagnostics and real-time alerts. For systems that include the Unified Computing System Manager, the support service includes downloads of UCSM upgrades. The Unified Computing Support Service includes flexible hardware replacement options, including replacement in as little as two hours. There is also access to Cisco's extensive online technical resources to help maintain optimal efficiency and uptime of the unified computing environment.

- UC Support 8X5XNBD Not on-site CON-UCS1-B66251U

- UC Support 8X5X4 Not on-site CON-UCS2-B66251U
- UC Support 24x7x4 Not on-site CON-UCS3-B66251U
- UC Support 24x7x2 Not on-site CON-UCS4-B66251U

- UC Support 8X5XNBD On-site CON-UCS5-B66251U
- UC Support 8X5X4 On-site CON-UCS6-B66251U
- UC Support 24x7x4 On-site CON-UCS7-B66251U

- UC Support 24x7x2 On-site CON-UCS8-B66251U

Unified Computing Warranty Plus Service

For faster parts replacement than is provided with the standard Cisco Unified Computing System warranty, Cisco offers the Cisco Unified Computing Warranty Plus Service. Customers can choose from several levels of advanced parts replacement coverage, including onsite parts replacement in as little as two hours. Warranty Plus provides remote access any time to Cisco support professionals who can determine if a return materials authorization (RMA) is required.

- UC Warranty Plus 24x7x4   CON-UCW3-B66251U
- UC Warranty Plus 8X5XNBD On- Site   CON-UCW5-B66251U

For more information, see
Unified Computing Warranty and Support Services.

For a complete listing of available Services for Cisco Unified Computing System:
Unified Computing Services.

Product Notes

Memory notes, allowable configurations, and rules/guidelines

Figure 5. DIMM Slot Numbering for the Cisco UCS B200 M2 Server
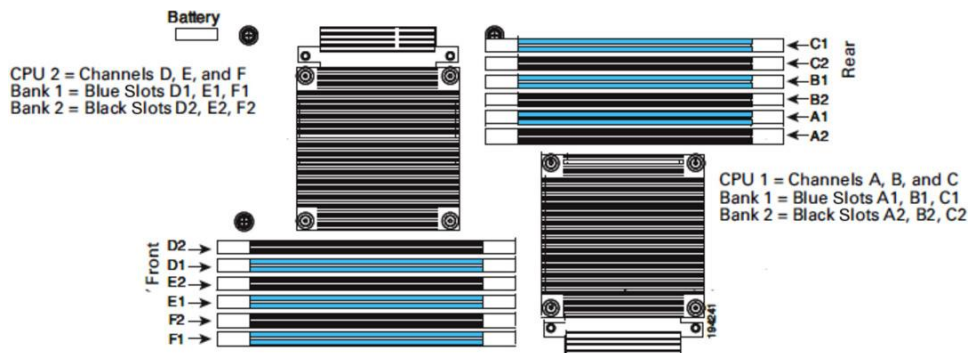
Table 2. DIMM Installation Order

Population Rules	Preferred DIMM Population Order		
	DIMMs per CPU	Install in CPU 1 Slots	Install in CPU 2 Slots
DIMMs within a server bank should all be the same type, speed, and size. Mixing different DIMMs causes the server to set the memory speed to that of the slowest installed DIMMs.	1	A1	D1
	2	A1, B1	D1, E1
CPU 1 supports memory mirroring only when Channels A and B are populated with identical DIMM patterns. In this case, do not populate Channel C because memory mirroring will automatically be disabled.	3	A1, B1, C1	D1, E1, F1
CPU 2 supports memory mirroring only when Channels D and E are populated with identical DIMM patterns. In this case, do not populate Channel C because memory mirroring will automatically be disabled.	4	A1, A2, B1, C1	D1, D2, E1, F1
	5	A1, A2, B1, B2, C1	D1, D2, E1, E2, F1
If memory mirroring is used, the total memory capacity is reduced by 50%. Memory sparing is not supported.	6	A1, A2, B1, B2, C1, C2	D1, D2, E1, E2, F1, F2

Memory Performance

- The CPU(s) you select can have some affect on performance.
- DIMM's can be run in a one-DIMM per-channel or a two-DIMM per-channel configuration. Each of these arrangements provides a different behavior.
- Recommendations for achieving performance of 1333 MHz on B200 M2 servers:
  - Use Intel Xeon X5680, X5670, or X5650 processors.
  - Use only Cisco certified single or dual-rank DIMMs that support 1333 MHz speeds. DIMMs do not have to be identical in type or capacity, but performance is optimized when memory type and quantity is equal for all memory channels on all CPUs.
  - Always set the system BIOS to operate the DIMMs in Performance mode in order to run at 1333 MHz.
  - Fully populating bank 1 or bank 2 with DIMMs will ensure optimal memory bandwidth running at the 1333-MHz speed. If DIMMs are partially populated in bank 1 (less than six DIMMs) or bank 2 patterns (less than 12 but more than 6 DIMMs), the 1333-MHz speed can be used, but the overall memory bandwidth will not be optimal.

Technical Specifications

Physical Dimensions Specifications

Table 3.   Physical Dimension Specifications for the Cisco UCS B00 M2 Blade Server

Specification	Value
Height	1.95 inches (50 mm)
Width	8.00 inches (203 mm)
Depth	24.4 inches (620 mm)
Weight	13.5 lbs (6.1 kg) [*]

[*]**Note:** The system weight listed here is an estimate for a fully configured system and will vary depending on number of peripheral devices.

Power Specifications

For configuration-specific power specifications, use the Cisco UCS Power Calculator at:
http://www.cisco.com/assets/cdc_content_elements/flash/dataCenter/cisco_ucs_power_calculator/.

Environmental Specifications

Table 4.   Environmental Specifications for the Cisco UCS B200 M2 Blade Server

Environment	Specification
Temperature operating	50 to 95°F (10 to 35°C)
Temperature nonoperating	-40 to 149°F (-40 to 65°C)
Altitude: Operating	0 to 10,000 ft (0 to 3000m); maximum ambient temperature decreases by 1°C per 300m
Altitude: Non operating	40,000 ft (12,000m)
Humidity	5-93% non condensing
Safety	• UL 60950-1 • CAN/CSA-C22.2 No. 60950-1 • EN 60950-1 • IEC 60950-1 • AS/NZS 60950-1 • GB4943
EMC: Emissions	• 47CFR Part 15 (CFR 47) Class A • AS/NZS CISPR22 Class A • CISPR2 2 Class A • EN55022 Class A • ICES003 Class A • VCCI Class A • EN61000-3-2 • EN61000-3-3 • KN22 Class A • CNS13438 Class A
EMC: Immunity	• EN50082-1 • EN61000-6-1 • EN55024 • CISPR24 • EN300386 • KN 61000-4 Series

For More Information

Please visit http://www.cisco.com/go/ucs.

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